

MODULE DESCRIPTOR

Module Title

Pharmaceutical Chemistry

Reference	PL1001	Version	1
Created	April 2022	SCQF Level	SCQF 7
Approved	July 2022	SCQF Points	30
Amended	August 2021	ECTS Points	15

Aims of Module

To provide an introduction to medicinal chemistry appropriate for the study and understanding of structures, properties and behaviours of molecules as applied to and in the context of pharmaceutical sciences.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Demonstrate a knowledge of selected aspects of medicinal chemistry.
- 2 Demonstrate an understanding of the origins, structures, properties and behaviours of molecules within the context of pharmaceutical sciences, including drugs, excipients and receptors at a molecular level.
- 3 Demonstrate a knowledge of procedures used, problem solving and reporting of data in practical medicinal chemistry.

Indicative Module Content

Structure of molecules: electron configuration, orbitals, bonding, hybridisation, intermolecular forces, stereochemistry. Properties of solids, liquids & gases. Functional Groups: aliphatic, aromatic, heteroaromatic; reaction types. Origin of drugs: pharmacognosy, natural products. Drug structure, function, action, Lipinski's Rules. Basic laboratory skills in practical medicinal and pharmaceutical chemistry.

Module Delivery

Lectures and coursework sessions (consisting of practical exercises including laboratory work, data interpretation, computer-based exercises and tutorials). Directed study (consisting of paper and electronic based materials often incorporating self-assessment and directed reading).

Indicative Student Workload

	Full Time	Part Time
Contact Hours	80	N/A
Non-Contact Hours	220	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Examination	Weighting:	50%	Outcomes Assessed:	1, 2
Description:	Closed book written examination				

Component 2

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	3
Description:	An individual written laboratory report				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

Component 1 (EX1) comprises 50% of the module grade. A minimum of a Grade D or better is required to pass this assessment. Component 2 (CW1) comprises 50% of the module grade. A minimum of a Grade D or better is required to pass this assessment. Overall Grade D or better is required to pass this module. Non-submission of either component will result in an NS grade for the module.

		Examination:						
		A	B	C	D	E	F	NS
Coursework:	A	A	A	B	C	E	E	
	B	A	B	B	C	E	E	
	C	B	B	C	C	E	E	
	D	B	C	C	D	E	E	
	E	E	E	E	E	E	F	
	F	E	E	E	E	F	F	
	NS	Non-submission of work by published deadline or non-attendance for examination						

Module Requirements

Prerequisites for Module	None, in addition to course requirements.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

- 1 BARBER, J. and ROSTON, C., 2021. *Pharmaceutical Chemistry*. Second Edition. Oxford: Oxford University Press.
- 2 PATRICK, G., 2017. *An Introduction to Medicinal Chemistry*. Sixth Edition. Oxford: Oxford University Press.
- 3 KOTZ, J.C., TREICHEL, P.M., TOWNSEND, J. AND TREICHEL, D., 2015. *Chemistry and Chemical Reactivity*. Ninth Edition. Australia: Cengage Learning.
- 4 CAIRNS, D., 2012. *Essentials of Pharmaceutical Chemistry*. Fourth Edition. London: Pharmaceutical Press.
- 5 LOUDON, G.M., 2016. *Organic Chemistry*. Sixth Edition. Oxford: Oxford University Press.